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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/772,066 | 02/04/2004 | Rainer Gluck | 022230-9026-00 | 4530 |
| 23409 7590 06/16/2009 MICHAEL BEST & FRIEDRICH LLP 100 E WISCONSIN AVENUE Suite 3300 MILWAUKEE, WI 53202 | | | | |
| EXAMINER | | | | |
| LEO, LEONARD R | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3744 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/772,066

Applicant(s)

GLUCK, RAINER

Examiner

Leonard R. Leo

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-42 is/are pending in the application.
- 4a) Of the above claim(s) 5, 7, 10, 14, 19, 21, 24, 28, 33, 35, 38 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8, 9, 11-13, 15, 17, 18, 20, 22, 23, 25-27, 29-32, 34, 36, 37 and 39-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-846)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed on February 13, 2009 has been entered. Claims 1-15 and 17-42 are pending, and claims 5, 7, 10, 14, 19, 21, 24, 28, 33, 35, 38 and 42 remain withdrawn from further consideration.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8-9, 12, 15-18, 20, 23, 29-32, 34, 36-37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armes in view of Ostbo.

Armes discloses a plate heat exchanger comprising a first end plate 16 having a connector 12 with hole 46, a second end plate 18, a plurality of intermediate plates 20, and fluid line 46'; but does not disclose an acute angle formed between two cross-sectional planes of the connector. Note the plates 16, 18, 20 have the same cross-sectional shape as disclosed in Figure 2 (column 1, lines 52-59). The plates are oriented differently, i.e. rotated or flipped.

Ostbo discloses a plate heat exchanger comprising a first end plate 4 defining a fluid connector with a first plane and a second plane forming an acute angle, a second end plate 5, intermediate plates 8, and fluid line 7 having an acute angle formed between two cross-sectional planes of the connector for the purpose of minimizing pressure drop of the outlet fluid.

Since Armes and Ostbo are both from the same field of endeavor and/or analogous art, the purpose disclosed by Ostbo would have been recognized in the pertinent art of Armes.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Armes an acute angle formed between two cross-sectional planes of the connector for the purpose of minimizing pressure drop of the outlet fluid as recognized by Ostbo.

Regarding claims 2-3, 17 and 31, the fluid line 46' of Armes extends over and is roughly parallel to the first end plate 16.

Regarding claims 4, 6, 18, 20, 32 and 34, Armes discloses auxiliary support 14 with an upstanding flange soldered to the first end plate 16 to support the fluid line 46'. Furthermore, the recitation of "soldered" is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 8 and 36, as permissibly gleaned from the drawings, Ostbo discloses the acute angle is about 70 degrees.

Regarding claims 9, 23 and 37, Armes discloses fluid line 46' is soldered to the connector 14. Again, the recitation of "soldered" is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 12 and 40, Armes discloses manifold formed by aligned openings 24, 26, 28, 30 in the plates 20.

Claims 11, 13, 25, 27, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armes in view of Ostbo as applied to claims 1-4, 6, 8-9, 12, 15-18, 20, 23, 29-32, 34, 36-37 and 40 above, and further in view of Wright.

The device of the combined teachings of Armes and Ostbo lacks a vent.

Wright discloses a plate heat exchanger comprising first and second end plates 9 having a connectors, intermediate plates 8, fluid line 10, and vent 11 for the purpose of ease of maintenance.

Since Armes and Wright are both from the same field of endeavor and/or analogous art, the purpose disclosed by Wright would have been recognized in the pertinent art of Armes.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Armes a vent for the purpose of ease of maintenance as recognized by Wright.

Regarding claims 13, 27 and 41, Wright discloses the connector is concentric with the manifolds defined by holes 2-5.

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive.

The recitation of “defining” does not structurally define over the combination of Armes and Ostbo.

Applicant's remarks are not commensurate in scope with the claims. The thickness of the plates of Armes or Ostbo is not of consequence. Furthermore, one of ordinary skill in the art would consider the advantages or disadvantages of the plate thickness in view of manufacture, strength, weight, costs, etc.

No further comments are deemed necessary at this time.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ LEONARD R LEO /
PRIMARY EXAMINER
ART UNIT 3744

June 16, 2009